

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P182835

Luminaire Tested: **LDSQA4A18930D010TE LAR35FL 4LSQAL1H 30°**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P182835
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26804)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDSQA4A18930D010TE LAR35FL 4LSQAL1H 30°
Description: PORTFOLIO 4" SQUARE LENSED ADJUSTABLE, SELF-FLANGED, 35° FLOOD, 30° Tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1640.7 lumens
Efficiency: N/A
Efficacy: 56.3 lumens/watt
Spacing Criteria (0/90/45): 2.46 / 0.61 / 1.2
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

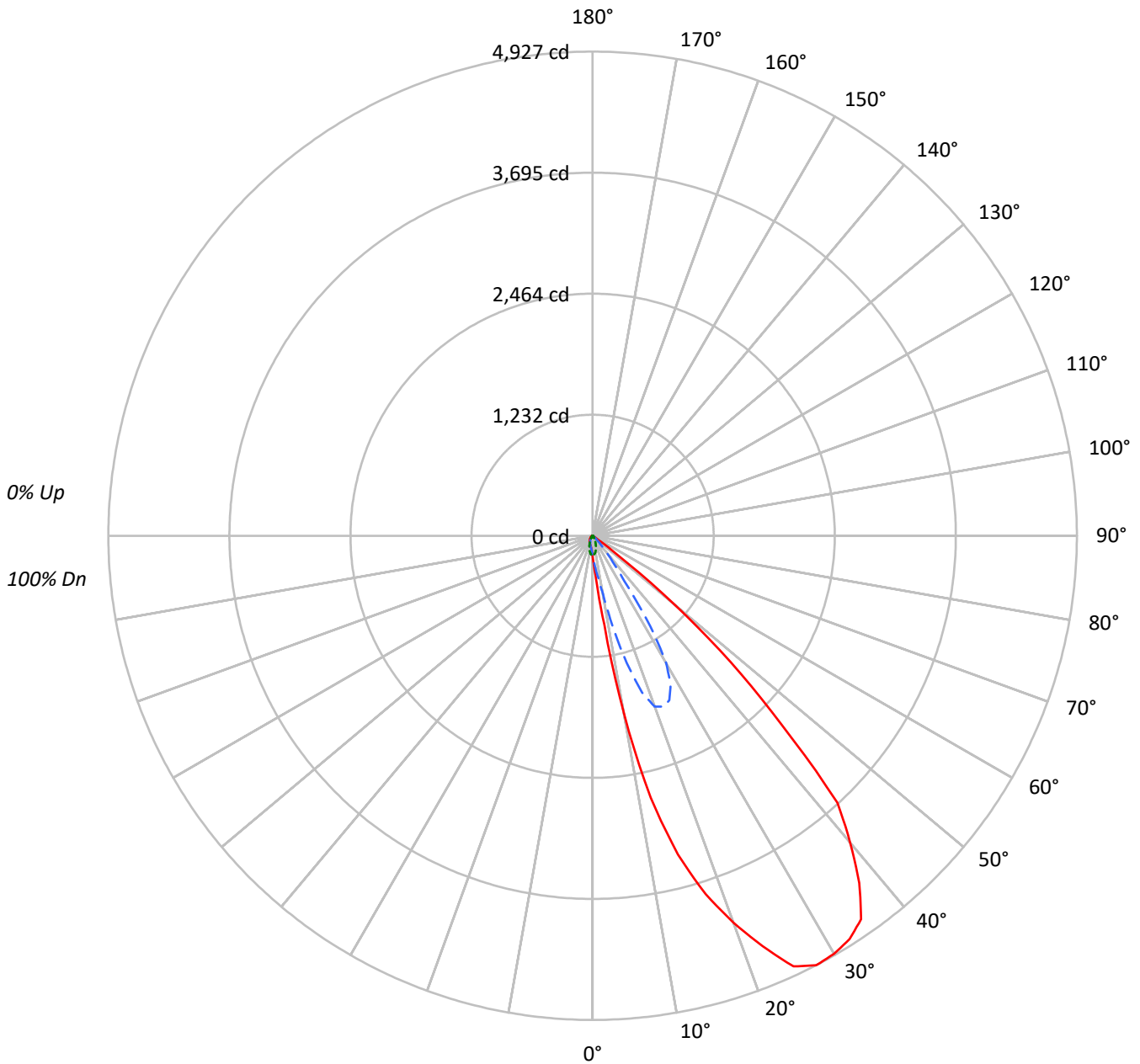
Input Watts (W): 29.12
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	109	106	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91																			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82																			
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	82	79	76	74																			
4	92	83	77	71	90	82	76	71	80	74	70	78	73	69	76	72	68	67																			
5	86	76	69	64	84	75	68	64	73	67	63	71	66	62	70	65	62	60																			
6	80	70	62	57	79	69	62	57	67	61	57	66	60	56	64	59	56	54																			
7	75	64	57	52	74	63	56	51	62	56	51	60	55	51	59	54	50	49																			
8	70	59	52	47	69	58	51	46	57	51	46	56	50	46	55	50	46	44																			
9	66	54	47	42	64	54	47	42	53	46	42	52	46	42	51	45	42	40																			
10	62	50	43	38	60	50	43	38	49	42	38	48	42	38	47	42	38	36																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	19656	19656	19656
5°	46065	18554	12973
10°	182004	16300	10811
15°	336833	13048	9488
20°	431896	9495	8588
25°	516750	6734	7600
30°	549467	4430	6689
35°	563133	2673	5830
40°	515484	1733	5008
45°	371976	1219	4096
50°	162392	980	3406
55°	11198	811	2871
60°	2034	775	2344
65°	734	734	1673
70°	680	906	1133
75°	599	1198	1198
80°	0	1785	1339
85°	0	3557	889



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	29.6	1.8
10°-20°	232.2	14.2
20°-30°	486.2	29.6
30°-40°	541.2	33.0
40°-50°	310.7	18.9
50°-60°	31.0	1.9
60°-70°	4.9	0.3
70°-80°	3.1	0.2
80°-90°	1.9	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	748.0	45.6
0°-40°	1289.2	78.6
0°-60°	1630.9	99.4
0°-90°	1640.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1640.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	203	203	203	203	203	
5°	474	327	191	139	133	87
15°	3358	1341	130	91	95	949
25°	4834	1845	63	56	71	2189
35°	4762	563	23	32	49	2908
45°	2715	68	9	18	30	2073
55°	66	10	5	10	17	198
65°	3	2	3	6	7	4
75°	2	2	3	4	3	1
85°	0	2	3	2	1	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9
2.5°	303.1	296.6	290.2	286.1	282.1	287.8	283.7	282.1	270.8	265.1	260.3
5°	473.7	461.5	443.8	429.2	414.7	417.9	406.6	392.8	364.5	344.3	326.6
7.5°	914.2	884.3	829.3	776.0	722.6	712.9	677.4	615.9	536.7	476.9	425.2
10°	1850.2	1759.7	1658.6	1549.5	1421.8	1386.2	1298.1	1131.6	949.7	742.0	591.7
12.5°	2731.2	2690.0	2571.2	2429.7	2291.5	2206.6	2115.3	1840.5	1551.9	1217.3	937.6
15°	3358.5	3333.4	3229.1	3100.6	2951.9	2896.9	2785.4	2511.4	2146.8	1746.7	1341.0
17.5°	3823.2	3780.4	3671.3	3531.4	3355.2	3308.4	3175.0	2902.6	2524.3	2122.6	1672.4
20°	4189.4	4162.7	4021.3	3853.1	3642.2	3585.6	3429.6	3145.9	2734.5	2307.7	1849.4
22.5°	4518.4	4473.1	4299.3	4098.9	3858.0	3797.4	3623.6	3312.4	2870.3	2395.0	1880.9
25°	4834.4	4765.7	4554.7	4292.0	4009.1	3926.7	3735.9	3406.2	2920.4	2402.3	1845.3
27.5°	4926.6	4891.8	4697.0	4391.5	4064.1	3971.2	3772.3	3427.2	2901.8	2336.0	1717.6
30°	4912.0	4882.9	4720.4	4401.2	4054.4	3956.6	3754.5	3362.5	2793.5	2163.0	1492.1
32.5°	4865.9	4854.6	4658.2	4317.1	3963.9	3857.2	3638.9	3201.7	2590.6	1899.5	1090.4
35°	4761.7	4717.2	4472.3	4151.4	3811.9	3694.7	3448.2	2971.3	2323.0	1383.0	563.4
37.5°	4456.1	4421.4	4228.2	3946.9	3616.3	3466.0	3205.7	2673.8	1798.5	786.5	337.1
40°	4076.2	4059.3	3907.3	3655.9	3302.7	3133.0	2850.0	2188.1	1097.7	447.0	222.3
42.5°	3686.6	3681.8	3519.3	3256.6	2873.5	2678.7	2385.3	1475.9	583.6	270.0	128.5
45°	2715.1	2744.2	2631.0	2473.4	2180.8	2039.3	1658.6	760.6	336.3	149.5	67.9
47.5°	1904.3	1872.0	1671.6	1395.9	1128.4	955.4	722.6	359.7	179.4	78.4	38.8
50°	1077.5	1083.1	902.1	729.9	478.5	379.1	287.8	181.1	86.5	41.2	23.4
52.5°	281.3	294.2	253.8	218.2	185.9	151.2	122.1	78.4	41.2	24.2	15.4
55°	66.3	68.7	63.9	59.8	56.6	50.1	44.5	33.9	22.6	15.4	9.7
57.5°	23.4	24.2	23.4	23.4	22.6	21.8	20.2	17.8	13.7	9.7	6.5
60°	10.5	11.3	10.5	11.3	11.3	11.3	11.3	11.3	8.1	5.7	4.0
62.5°	4.8	4.8	4.8	4.8	5.7	5.7	6.5	6.5	4.8	4.0	3.2
65°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4
67.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
70°	2.4	2.4	2.4	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.4
72.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6
80°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
82.5°	0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8	1.6	1.6	1.6
85°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6
87.5°	0.0	0.0	0.0	0.0	0.8	0.8	0.8	0.8	1.6	1.6	1.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9
2.5°	251.4	250.6	241.7	235.2	232.0	227.1	221.5	213.4	204.5	196.4	193.2
5°	305.5	295.0	276.4	261.1	253.8	246.5	233.6	219.0	205.3	190.8	183.5
7.5°	375.9	345.1	308.8	280.5	268.4	256.2	237.6	217.4	198.8	179.4	168.9
10°	472.0	400.9	337.9	292.6	274.8	258.7	232.0	206.9	186.7	165.7	152.0
12.5°	674.9	498.7	368.6	298.3	274.8	253.8	221.5	192.4	169.7	147.9	135.0
15°	972.4	673.3	435.7	303.9	269.2	242.5	205.3	173.8	149.5	130.1	118.0
17.5°	1212.4	834.2	518.9	318.5	261.9	227.1	184.3	151.2	128.5	110.7	101.0
20°	1333.7	902.1	556.9	320.9	244.1	202.9	159.2	127.7	107.5	92.1	84.1
22.5°	1331.3	880.2	523.0	281.3	214.2	175.4	134.2	105.1	88.9	76.8	70.3
25°	1247.2	779.2	436.5	224.7	173.0	145.5	109.1	84.9	71.9	63.0	57.4
27.5°	1089.6	632.9	325.7	166.5	135.0	114.8	84.9	67.9	57.4	50.9	46.9
30°	855.2	423.5	205.3	123.7	102.7	86.5	65.5	52.5	45.3	39.6	37.2
32.5°	471.2	220.7	138.2	90.5	75.2	63.0	48.5	38.0	33.1	29.1	28.3
35°	260.3	156.0	98.6	60.6	50.1	42.8	33.1	27.5	24.2	22.6	22.6
37.5°	184.3	100.2	59.0	38.0	32.3	28.3	22.6	19.4	18.6	17.8	17.8
40°	110.7	59.0	35.6	25.1	21.8	19.4	17.0	14.5	14.5	13.7	14.5
42.5°	60.6	35.6	24.2	17.8	15.4	14.5	12.1	11.3	11.3	11.3	12.1
45°	36.4	23.4	17.0	12.9	11.3	9.7	8.9	8.1	8.9	8.9	9.7
47.5°	23.4	17.0	11.3	8.1	7.3	6.5	5.7	6.5	6.5	7.3	8.1
50°	16.2	10.5	7.3	4.8	4.8	4.0	4.8	4.8	5.7	6.5	7.3
52.5°	10.5	7.3	4.8	4.0	3.2	3.2	3.2	4.0	4.8	5.7	6.5
55°	6.5	4.8	4.0	3.2	3.2	3.2	3.2	3.2	4.0	4.8	5.7
57.5°	4.8	4.0	3.2	2.4	2.4	2.4	3.2	3.2	4.0	4.0	4.8
60°	3.2	3.2	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.0	4.8
62.5°	3.2	3.2	2.4	2.4	2.4	2.4	3.2	3.2	3.2	4.0	4.0
65°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	4.0
67.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.0
70°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	4.0
72.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2
75°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
77.5°	1.6	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
80°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
82.5°	1.6	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
85°	1.6	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2	3.2
87.5°	1.6	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9
2.5°	189.1	183.5	178.6	180.2	177.0	171.4	169.7	165.7	160.9	160.0	160.0
5°	175.4	166.5	159.2	158.4	155.2	148.7	147.1	143.1	139.0	138.2	137.4
7.5°	158.4	148.7	142.3	140.6	138.2	132.6	131.8	127.7	125.3	123.7	123.7
10°	141.5	132.6	126.9	126.1	124.5	119.6	118.8	115.6	113.2	112.4	111.5
12.5°	125.3	118.0	113.2	112.4	110.7	106.7	105.9	103.5	101.8	101.0	101.0
15°	109.9	103.5	99.4	98.6	97.8	93.8	93.8	92.1	91.3	91.3	92.1
17.5°	94.6	88.9	85.7	84.9	84.9	81.6	82.4	81.6	81.6	81.6	83.3
20°	79.2	74.4	71.9	72.7	71.1	70.3	71.1	71.1	71.1	72.7	75.2
22.5°	66.3	62.2	59.8	60.6	60.6	59.8	60.6	61.4	63.0	65.5	67.9
25°	54.2	50.9	50.1	50.9	50.9	50.9	52.5	54.2	55.8	58.2	60.6
27.5°	43.6	41.2	41.2	42.0	42.8	42.8	45.3	46.9	49.3	51.7	54.2
30°	34.8	33.9	33.9	35.6	35.6	36.4	39.6	41.2	42.8	45.3	47.7
32.5°	27.5	27.5	28.3	29.9	29.9	31.5	33.9	35.6	37.2	39.6	42.0
35°	22.6	23.4	24.2	25.1	25.9	26.7	29.1	30.7	32.3	34.8	36.4
37.5°	18.6	19.4	20.2	21.8	21.8	22.6	25.1	26.7	27.5	29.9	32.3
40°	15.4	16.2	17.0	18.6	18.6	19.4	21.8	22.6	23.4	25.9	28.3
42.5°	12.9	13.7	14.5	15.4	16.2	17.0	18.6	19.4	21.0	22.6	24.2
45°	10.5	11.3	12.1	12.9	13.7	14.5	15.4	17.0	17.8	19.4	21.0
47.5°	8.9	9.7	10.5	11.3	12.1	12.1	13.7	14.5	15.4	17.0	18.6
50°	8.1	8.9	9.7	9.7	10.5	11.3	12.1	12.9	13.7	14.5	16.2
52.5°	6.5	7.3	8.1	8.9	8.9	9.7	10.5	11.3	12.1	12.9	13.7
55°	6.5	6.5	7.3	8.1	8.1	8.9	9.7	10.5	10.5	11.3	12.1
57.5°	5.7	6.5	6.5	7.3	7.3	8.1	8.9	8.9	9.7	9.7	10.5
60°	4.8	5.7	6.5	6.5	6.5	7.3	7.3	8.1	8.1	8.9	8.9
62.5°	4.8	5.7	5.7	6.5	6.5	6.5	7.3	7.3	7.3	8.1	8.1
65°	4.8	4.8	5.7	5.7	5.7	5.7	6.5	6.5	6.5	7.3	7.3
67.5°	4.0	4.8	4.8	4.8	5.7	5.7	5.7	5.7	5.7	6.5	6.5
70°	4.0	4.0	4.8	4.8	4.8	4.8	4.8	5.7	5.7	5.7	5.7
72.5°	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8	4.8
75°	3.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	3.2	3.2	3.2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	2.4
85°	3.2	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
87.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P182835

CATALOG NUMBER: LDSQA4A18930D010TE LAR35FL 4LSQAL1H 30°

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	202.9	202.9	202.9	202.9	202.9	202.9	202.9	202.9
2.5°	156.8	155.2	154.4	156.8	153.6	155.2	154.4	155.2
5°	135.0	133.4	132.6	135.0	131.8	133.4	131.8	133.4
7.5°	121.2	120.4	119.6	121.2	118.8	120.4	119.6	120.4
10°	109.9	109.1	108.3	110.7	108.3	109.9	109.1	109.9
12.5°	100.2	100.2	99.4	101.0	99.4	101.0	100.2	101.0
15°	91.3	92.1	91.3	93.0	92.1	93.8	93.0	94.6
17.5°	84.1	84.9	84.9	87.3	86.5	88.9	88.1	88.9
20°	76.8	77.6	78.4	80.0	80.0	82.4	81.6	83.3
22.5°	69.5	71.1	71.1	73.6	73.6	76.0	76.0	76.8
25°	62.2	64.7	65.5	67.1	67.9	70.3	70.3	71.1
27.5°	56.6	58.2	59.0	61.4	62.2	64.7	64.7	66.3
30°	50.1	52.5	53.3	55.0	55.8	58.2	58.2	59.8
32.5°	44.5	46.1	47.7	49.3	50.1	52.5	52.5	54.2
35°	38.8	41.2	42.0	43.6	45.3	47.7	47.7	49.3
37.5°	33.9	36.4	37.2	38.8	40.4	42.8	42.8	44.5
40°	29.9	32.3	33.1	34.8	35.6	38.8	38.8	39.6
42.5°	26.7	28.3	29.1	30.7	31.5	33.1	33.1	34.8
45°	22.6	24.2	25.1	25.9	27.5	29.1	29.1	29.9
47.5°	19.4	21.0	21.8	22.6	23.4	25.1	25.1	26.7
50°	17.0	17.8	18.6	19.4	20.2	21.8	21.8	22.6
52.5°	14.5	15.4	16.2	17.0	17.8	18.6	19.4	20.2
55°	12.9	13.7	13.7	14.5	15.4	16.2	16.2	17.0
57.5°	11.3	12.1	12.1	12.1	12.9	13.7	13.7	14.5
60°	9.7	10.5	10.5	10.5	11.3	11.3	11.3	12.1
62.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
65°	7.3	7.3	7.3	7.3	7.3	7.3	6.5	7.3
67.5°	6.5	6.5	6.5	5.7	5.7	5.7	5.7	5.7
70°	5.7	5.7	5.7	4.8	4.8	4.8	4.0	4.0
72.5°	4.8	4.8	4.8	4.0	4.0	4.0	3.2	3.2
75°	4.0	4.0	4.0	4.0	3.2	3.2	3.2	3.2
77.5°	3.2	3.2	3.2	3.2	3.2	3.2	2.4	2.4
80°	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4
82.5°	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6
85°	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8
87.5°	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)